

AMENDMENTS TO THE DRAWINGS

Please Replace Figures 11A-11D of the Present Application with the following replacement Figures.

Figures 11A-D have been labeled as --Conventional Art--.

Attachment: 1 Replacement Sheet

REMARKS

Claims 1-11 are all the claims pending in the application.

Objections

The Examiner has objected to the Drawings, asserting that Figs. 11A-11D should be designated by a legend such as --Prior Art-- because only that which is old is illustrated.

Corrected drawing sheets have been provided herewith and Applicants respectfully submit that all of the Examiner's objections have been fully addressed. Therefore, Applicants respectfully request that this objection be withdrawn.

The Examiner has objected to the specification based on informalities. The specification has been appropriately amended herein and Applicants respectfully submit that all of the Examiner's concerns have been fully addressed. Therefore, Applicants respectfully request that this objection be withdrawn.

Claim Rejections-35 U.S.C. 102(b)

Claims 1 and 5 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Japan 206 (JP 61-081206; henceforth "Kakigi"). Applicants respectfully traverse this rejection.

The Examiner has based his rejection on an English translation of the abstract and figures of Kakigi. The Examiner points to Fig. 1 as anticipating claims 1 and 5 of the present application. Applicants respectfully submit that the Examiner has misconstrued Kakigi.

Claim 1 of the present application recites, inter alia, a tread block having a height that is gradually reduced from the central portion toward the leading and trailing edges of the tread block. Claim 1 further recites that the profile line of the tread surface has a recess dented inward beyond the virtual line connecting the point where the height begins to be reduced and the block edge.

According to the abstract, Kakigi discloses providing two or more protrusions on the upper surface of a block provided on the surface of a tire tread. Figure 1 of Kakigi shows a substantially flat tread block with a plurality of semi-pyramidal protrusions located on its upper surface. Kakigi does not disclose the tread block gradually decreasing in height from the central portion out towards the edges. Further, Kakigi does not disclose the tread block having a recess, located at the front and back of the trailing block, which dents inward beyond the virtual line connecting the block edge to where the height begins to reduce. Therefore, Applicants respectfully submit that claim 1 is patentable over Kakigi and respectfully request that the rejection of claim 1 be withdrawn.

Further, claim 5 depends from claim 1 and Applicants respectfully submit claim 5 is patentable at least by virtue of its dependency. Therefore, Applicants respectfully request that the rejection of claim 5 be withdrawn as well.

Claims 1 and 2 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Wise (US 5,456,301). Applicants respectfully traverse this rejection.

In rejecting claims 1 and 2, the Examiner alleges that Wise discloses a tread block having a central portion formed by an arcuate portion having a center of curvature inside the tire. Applicants respectfully submit that the Examiner has misconstrued Wise.

Wise discloses a tire tread consisting of a plurality of tread blocks. Each tread block is shown to have a constant height in comparison to the base of the blocks. However, since the treads are part of a tire and a tire is generally round, the base of the blocks form a curve having a fixed radius and a center of curvature at the center of the tire. Further, the distance from the center of the tire to the top of the blocks appears to be constant and would be defined by the sum of the height of the block and the radius of the tire.

Conversely, claim 1 recites a tread block having a height H at its central portion and a decreasing height at its leading and trailing edges. Claim 2 recites a similar tread block wherein the profile of the decreasing section forms an arcuate portion having a center of curvature inside the tire. As shown in the Fig. 3 of the present application, for example, the height H of the block is measured from the base of the block to the top of the block. Since the blocks are part of the outer surface of the tire, the base of the block has a radius R5 from the center of the tire. Further, the radius from the center of the tire to the top of the block would be defined by R5+H. However, the leading and trailing edges of each tread block have a height less than H and the distance from the center of the tire to the top of the block at the edges is less than R5+H. As recited in claim 2, the change in height over the length of the block is defined by an arcuate portion of R3 having its center of curvature within the tire. However, as would be obvious to one of ordinary skill in the art, the location of the center of curvature would not be located at the center of the tire.

Further, as described in column 4, lines 51-54 of Wise an angle of approximately 90 degrees between the surface of the relief 122 and the contacting surface 86 is formed in order to make the tire for off road racing bite into the off road surface. By contrast, the recesses/second arcuate portion recited in claims 1 and 2 connect with the first position/ arcuate portion smoothly. Due to this, the rubber volume in the vicinity of the leading edge is reduced and the ground contacting timing at the time of contact is delayed. As a result, bending deformation of the entire block is suppressed. Further, the rubber volume in the vicinity of the trailing edge is also reduced. Accordingly, bending deformation in a direction opposite to the tire rotational direction is suppressed.

Wise does not teach or suggest a tread block having a height which is fixed at its center and which decreases toward the leading and trailing edges. Wise also does not teach or suggest a tread block wherein the height change is defined by an arcuate portion having a center of curvature within the tire. Therefore, Applicants respectfully submit that claims 1 and 2 are patentable over Wise and respectfully requests that the rejection of these claims be withdrawn..

Claim 1 stands rejected under 35 U.S.C. 102(e) as allegedly being anticipated by Lopez et al (US 2004/0045649; henceforth “Lopez”). Applicants respectfully traverse this rejection.

Claim 1 of the present application recites, inter alia, a tire tread block having a block height which decreases from a central portion of the block toward the leading and trailing edges of the block. Claim 1 further recites that a profile line of the tread surface has a recess dented inward in a tire radial direction beyond a virtual line connecting a first position, at which the block height begins to be reduced and a block edge.

In rejecting claim 1, the Examiner alleges that Figure 3 of Lopez anticipates claim 1 of the present application. We believe the Examiner has misconstrued Lopez. Figure 3 of Lopez discloses one type of surface profile discussed in Lopez. However, as shown in Figs. 3 and 4 of Lopez, only one of the leading side or the trailing side has a recess, and the distance between the center of gravity of each complementary volume V for each block and the mid-plane of the block is limited so as to adjust the geometry of the contact faces with the road to avoid the occurrence of the irregular wear on the treads.

By contrast, claim 1 recites that the block height of each block is gradually reduced from the central portion of the block in the circumferential direction toward the leading edge and the trailing edge, and both the leading edge and trailing edge have a recess dented inward in the tire radial direction beyond a virtual line. In this manner, the above-mentioned effects, such as

suppressing the bending deformation of the block, can be obtained. Lopez does not teach or suggest tread blocks having the structure recited in claim 1. Therefore, Applicants respectfully submit that claim 1 is patentable over Lopez and respectfully request that the rejection of claim 1 be withdrawn.

Claim Rejections-35 U.S.C. 103

Claims 1, 2, 5, and 8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Lopez and optionally Japan 221 (JP 09-058221; henceforth “Harayama”). Specifically, the Examiner asserts that even if Lopez does not anticipate claims 1 and 2, it renders it obvious especially in light of Harayama. Applicants respectfully traverse this rejection.

As discussed above, Lopez does not teach or suggest tread blocks having the structure recited in claim 1. Applicants respectfully submit that claim 2 is also patentable over Lopez based on arguments similar to those discussed above.

Moreover, as shown in Fig. 4 of Harayama, the two ends of the tread, which respectively correspond to the leading edge and trailing edge of the block recited in claims 1 and 2, are not recesses, as is recited in claims 1 and 2, but are actually convex portions of a wave shape. Further, the concave portions of the wave shape are sandwiched between the convex portions at the two ends. If the two ends of the tread in Harayama are structured to be the concave portions of the wave shape, the two end portions of the adjacent treads could not contact with each other fully because of the lack of extensibility of the concave portions, and the effects of the present invention cannot be achieved by Harayama. Therefore, Applicants respectfully submit that claims 1 and 2 are patentable over the combination of Lopez and Harayama and respectfully request that the rejection of these claims be withdrawn.

Further, claims 5 and 8 depend from claims 1 and 2 which have been shown above to be patentable over the combination of Lopez and Harayama. Therefore, Applicants respectfully submit that claims 5 and 8 are patentable at least by virtue of their dependency and respectfully request that the rejection of these claims be withdrawn as well.

Claims 3-4, 6-7 and 9-11 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Lopez and optionally Harayama as applied above and further in view of Comps (US 2002/0170644). Applicants respectfully traverse this rejection.

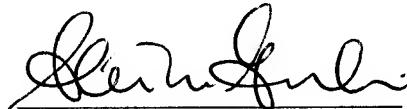
Claims 3-4, 6-7 and 9-11 depend from claims 1 and 2 which have been shown above to be patentable over the combination of Lopez and Harayama. Comps does not cure the deficiencies of Lopez and Harayama. Therefore, Applicants respectfully submit that claims 3-4, 6-7 and 9-11 are patentable at least by virtue of the dependency, and respectfully request that the rejection of these claims be withdrawn.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880 via EFS payment screen. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Steven M. Gruskin
Registration No. 36,818

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: January 16, 2008